

Naldini.ST25
SEQUENCE LISTING

<110> FONDAZIONE CENTRO SAN RAFFAELE DEL MONTE TABOR

<120> LENTIVIRAL VECTORS CARRYING SYNTHETIC BI-DIRECTIONAL PROMOTERS AND USES THEREOF

<130> 81240PCT

<140> PCT/IT2004/000227

<141> 2004-04-21

<160> 8

<170> PatentIn version 3.1

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<220>

<221> misc_feature

<222> (1)..(20)

<223> LV forward primer

<400> 1
tgaaagcgaa agggaaacca

20

<210> 2

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<220>

<221> misc_feature

<222> (1)..(15)

<223> LV reverse primer

<400> 2
ccgtgcgcgc ttcag

15

<210> 3

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> probe

<220>

<221> misc_feature

<222> (1)..(18)

<223>

<220>

<221> misc_feature

<222> (1)..(18)

<223> LV probe

<400> 3
ctctctcgac gcaggact

18

<210> 4

Naldini.ST25

<211> 9613

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid

<220>

<221> misc_feature

<222> (1)..(9613)

<223> plasmid containing the lentiviral vector construct RRL-MA1-lucif/
GFP

<400> 4

```
caggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttatTT ttctaaatac      60
attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa      120
aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt tttgcggcat      180
tttgccttcc tgTTTTtGct caccagaaa cgctggtgaa agtaaaagat gctgaagatc      240
agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag atccttgaga      300
gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg ctatgtggcg      360
cggtattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata cactattctc      420
agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat ggcattgacag      480
taagagaatt atgcagtgct gccataacca tgagtataaa cactgcggcc aacttacttc      540
tgacaacgat cggaggaccg aaggagctaa ccgctTTTTT gcacaacatg ggggatcatg      600
taactcgcct tgatcgttgg gaaccgggagc tgaatgaagc cataccaaac gacgagcgtg      660
acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact ggcgaactac      720
ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa gttgcaggac      780
cacttctgcg ctccggccctt ccggctggct ggtttattgc tgataaatct ggagccgggtg      840
agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaagccc tcccgtatcg      900
tagttatcta cacgacgggg agtcaggcaa ctatggatga acgaaataga cagatcgctg      960
agataggtgc ctactgatt aagcattggt aactgtcaga ccaagtttac tcatatatac     1020
tttagattga tttaaaactt catTTTTaat ttaaaaggat ctaggtgaag atcctTTTTg     1080
ataatctcat gacaaaaatc ccttaacgtg agttttcggt ccactgagcg tcagacccccg     1140
```

Naldini.ST25

tagaaaaagat	caaaggatct	tcttgagatc	ctttttttct	gcgcgtaatc	tgctgcttgc	1200
aaacaaaaaa	accaccgcta	ccagcggtag	tttgtttgcc	ggatcaagag	ctaccaactc	1260
tttttccgaa	ggtaactggc	ttcagcagag	cgcagatacc	aaatactgtc	cttctagtgt	1320
agccgtagtt	aggccaccac	ttcaagaact	ctgtagcacc	gcctacatac	ctcgctctgc	1380
taatcctgtt	accagtggct	gctgccagt	gcgataagtc	gtgtcttacc	gggttggact	1440
caagacgata	gttaccggat	aaggcgcagc	ggtcgggctg	aacggggggg	tcgtgcacac	1500
agcccagctt	ggagcgaacg	acctacaccg	aactgagata	cctacagcgt	gagctatgag	1560
aaagcgccac	gcttcccga	gggagaaagg	cggacaggta	tccggtaagc	ggcagggctc	1620
gaacaggaga	gcgcacgagg	gagcttccag	ggggaaacgc	ctggtatctt	tatagtcctg	1680
tcgggtttcg	ccacctctga	cttgagcgtc	gattttttgt	atgctcgtca	ggggggcgga	1740
gcctatggaa	aaacgccagc	aacgcggcct	ttttacgggt	cctggccttt	tgctggcctt	1800
ttgtcacat	gttctttcct	gcgttatccc	ctgattctgt	ggataaccgt	attaccgcct	1860
ttgagtgagc	tgataccgct	cgccgcagcc	gaacgaccga	gcgcagcgag	tcagtgagcg	1920
aggaagcgga	agagcgccca	atacgcaaac	cgctctctcc	cgcgcgttgg	ccgattcatt	1980
aatgcagctg	gcacgacagg	tttcccga	ggaaagcggg	cagtgcgcgc	aacgcaatta	2040
atgtgagtta	gctcactcat	taggcacccc	aggctttaca	ctttatgctt	ccggctcgta	2100
tggtgtgtgg	aattgtgagc	ggataacaat	ttcacacagg	aaacagctat	gaccatgatt	2160
acgccaagcg	cgcaattaac	cctcactaaa	gggaacaaaa	gctggagctg	caagcttaat	2220
gtagtcttat	gcaatactct	tgtagtcttg	caacatggta	acgatgagtt	agcaacatgc	2280
cttacaagga	gagaaaaagc	accgtgcatg	ccgattgggt	gaagtaaggt	ggtacgatcg	2340
tgccctatta	ggaaggcaac	agacgggtct	gacatggatt	ggacgaacca	ctgaattgcc	2400
gcattgcaga	gatattgtat	ttaagtgcct	agctcgatac	aataaacggg	tctctctggt	2460
tagaccagat	ctgagcctgg	gagctctctg	gctaactagg	gaacccactg	cttaagcctc	2520
aataaagctt	gccttgagt	cttcaagtag	tgtgtgcccc	tctgttgtgt	gactctggta	2580
actagagatc	cctcagaccc	ttttagtcag	tgtggaaaat	ctctagcagt	ggcgcccgaa	2640
cagggacctg	aaagcgaaa	ggaaaccaga	gctctctcga	cgcaggactc	ggcttgctga	2700
agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	ttttgactag	2760
cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	ggagaattag	2820
atcgcgatgg	gaaaaaattc	ggttaaggcc	agggggaaa	aaaaaatata	aattaaaca	2880
tatagtatgg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	tgtagaaac	2940
atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	caggatcaga	3000
agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	aaaggataga	3060

Naldini.ST25

gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	aaagtaagac	3120
caccgcacag	caagcggccg	ctgatcttca	gacctggagg	aggagatatg	agggacaatt	3180
ggagaagtga	attatataaa	tataaagtag	taaaaattga	accattagga	gtagcaccca	3240
ccaaggcaaa	gagaagagtg	gtgcagagag	aaaaaagagc	agtgggaata	ggagctttgt	3300
tccttggggtt	cttggggagca	gcaggaagca	ctatgggctgc	agcctcaatg	acgctgacgg	3360
tacaggccag	acaattattg	tctggtatag	tgcagcagca	gaacaatttg	ctgagggcta	3420
ttgaggcgca	acagcatctg	ttgcaactca	cagtctgggg	catcaagcag	ctccaggcaa	3480
gaatcctggc	tgtggaaaga	tacctaaagg	atcaacagct	cctgggggatt	tggggttgct	3540
ctggaaaact	catttgcacc	actgctgtgc	cttggaatgc	tagttggagt	aataaatctc	3600
tggaacagat	ttggaatcac	acgacctgga	tggagtggga	cagagaaatt	aacaattaca	3660
caagcttaat	acactcctta	attgaagaat	cgcaaaacca	gcaagaaaag	aatgaacaag	3720
aattattgga	attagataaa	tgggcaagtt	tgtggaattg	gtttaacata	acaaattggc	3780
tgtggtatat	aaaattattc	ataatgatag	taggaggctt	ggtaggttta	agaatagttt	3840
ttgctgtact	ttctatagtg	aatagagtta	ggcagggata	ttcaccatta	tcgtttcaga	3900
cccacctccc	aaccccgagg	ggacccgaca	ggcccgaagg	aatagaagaa	gaagggtggag	3960
agagagacag	agacagatcc	attcgattag	tgaacggatc	tcgacggtat	cggttaactt	4020
ttaaaagaaa	agggggggatt	gggggggtaca	gtgcagggga	aagaatagta	gacataatag	4080
caacagacat	acaaactaaa	gaattacaaa	aacaaattac	aaaaattcaa	aattttatcg	4140
atcacgagac	tagcctcgag	agatctgatc	ataatcagcc	ataccacatt	tgtagagggt	4200
ttacttgctt	taaaaaacct	cccacacctc	cccctgaacc	tgaaacataa	aatgaatgca	4260
attgttggtg	ttaacttggt	tattgcagct	tataatgggt	acaaataagg	caatagcatc	4320
acaaatttca	caaataaggc	atTTTTTTca	ctgcattcta	gttttggttt	gtccaaactc	4380
atcaatgtat	cttatcatgt	ctggatctca	aatccctcgg	aagctgcgcc	tgtcttaggt	4440
tggagtgata	catttttatc	acttttacct	gtctttggat	taggcagtag	ctctgacggc	4500
cctcctgtct	taggttagtg	aaaaatgtca	ctctcttacc	cgtcattggc	tgtccagctt	4560
agctcgagg	ggagggtggc	tggatcctct	agaattacac	ggcgatcttt	ccgcccttct	4620
tggcctttat	gaggatctct	ctgatttttc	ttgcgtcgag	ttttccggta	agacctttcg	4680
gtacttcgtc	cacaaacaca	actcctccgc	gcaacttttt	cgcggttggt	acttgactgg	4740
ccacgtaatc	cacgatctct	ttttccgtca	tcgtctttcc	gtgctccaaa	acaacaacgg	4800
cggcggaag	ttcaccggcg	tcatcgtcgg	gaagacctgc	gacacctgcg	tcgaagatgt	4860
tgggggtgtg	gagcaagatg	gattccaatt	cagcgggagc	cacctgatag	cctttgtact	4920

Naldini.ST25

taatcagaga	cttcaggcgg	tcaacgatga	agaagtgttc	gtcttcgtcc	cagtaagcta	4980
tgtctccaga	atgtagccat	ccatccttgt	caatcaaggc	gttggtcgct	tccggattgt	5040
ttacataacc	ggacataatc	ataggacctc	tcacacacag	ttcgccctctt	tgattaacgc	5100
ccagcgtttt	cccggtatcc	agatccacaa	ccttcgcttc	aaaaaatgga	acaactttac	5160
cgaccgcgcc	cggtttatca	tccccctcgg	gtgtaatcag	aatagctgat	gtagtctcag	5220
tgagcccata	tccttgccctg	atacctggca	gatggaacct	cttggcaacc	gcttccccga	5280
cttccttaga	gaggggagcg	ccaccagaag	caatttcgtg	taaattagat	aaatcgtatt	5340
tgtcaatcag	agtgcctttg	gcgaagaagg	agaatagggt	tggcaccagc	agcgcacttt	5400
gaatcttgta	atcctgaagg	ctcctcagaa	acagctcttc	ttcaaatcta	tacattaaga	5460
cgactcgaaa	tccacatatc	aaatatccga	gtgtagtaaa	cattccaaaa	ccgtgatgga	5520
atggaacaac	acttaaaatc	gcagtatccg	gaatgatttg	attgccaaaa	ataggatctc	5580
tggcatgcga	gaatctcacg	caggcagttc	tatgaggcag	agcgacacct	ttaggcagac	5640
cagtagatcc	agaggagttc	atgatcagtg	caattgtctt	gtccctatcg	aaggactctg	5700
gcacaaaatc	gtattcatta	aaaccgggag	gtagatgaga	tgtgacgaac	gtgtacatcg	5760
actgaaatcc	ctggtaatcc	gttttagaat	ccatgataat	aatttttttg	atgattggga	5820
gctttttttg	cacgttcaaa	attttttgca	accccttttt	ggaaacgaac	accacggtag	5880
gctgcgaaat	gcccatactg	ttgagcaatt	cacgttcatt	ataaatgtcg	ttcgcgggcg	5940
caactgcaac	tccgataaat	aacgcgcccc	acaccggcat	aaagaattga	agagagtttt	6000
cactgcatac	gacgattctg	tgatttgtat	tcagcccata	tcgtttcata	gcttctgcca	6060
accgaacgga	catttcgaag	tactcagcgt	aagtgatgtc	cacctcgata	tgtgcatctg	6120
taaaagcaat	tgttccagga	accagggcgt	atctcttcat	agccttatgc	agttgctctc	6180
cagcggttcc	atcttccagc	ggatagaatg	gcgccgggcc	tttctttatg	tttttggcgt	6240
cttccatggg	gaattccgcg	gaggctggat	cggtccccgg	gtcttctatg	gagggtcaaaa	6300
cagcgtggat	ggcgtctcca	ggcgatctga	cggttcacta	aacgagctct	gcttatatag	6360
gcctcccacc	gtacacgcct	accctcgaga	agcttgatat	cgaattccca	cggggttggg	6420
gttgcgctt	ttccaaggca	gccctggggt	tgcgcaggga	cgcggtgct	ctgggctggg	6480
ttccgggaaa	cgcagcggcg	ccgaccctgg	gtctcgcaca	ttcttcacgt	ccgttcgcag	6540
cgtcaccggg	atcttcgccg	ctacccttgt	gggccccccg	gcgacgcttc	ctgctccgcc	6600
cctaagtcgg	gaaggttcct	tgcggttcgc	ggcgtgccgg	acgtgacaaa	cggaagccgc	6660
acgtctcact	agtaccctcg	cagacggaca	gcgccaggga	gcaatggcag	cgcgccgacc	6720
gcgatgggct	gtggccaata	gcggctgctc	agcggggcgc	gccgagagca	gcggccggga	6780
aggggcgggtg	cgggaggcgg	ggtgtggggc	ggtagtgtgg	gccctgttcc	tgcccgcgcg	6840

Naldini.ST25

gtgttccgca	ttctgcaagc	ctccggagcg	cacgtcggca	gtcggctccc	tcgttgaccg	6900
aatcaccgac	ctctctcccc	agggggatcc	accggtcgcc	accatggtga	gcaagggcga	6960
ggagctgttc	accggggtgg	tgcccatcct	ggtcgagctg	gacggcgacg	taaacggcca	7020
caagttcagc	gtgtccggcg	agggcgaggg	cgatgccacc	tacggcaagc	tgaccctgaa	7080
gttcatctgc	accaccggca	agctgcccgt	gccctggccc	accctcgtga	ccaccctgac	7140
ctacggcgty	cagtgttca	gccgctaccc	cgaccacatg	aagcagcacg	acttcttcaa	7200
gtccgccatg	cccgaaggct	acgtccagga	gcgaccatc	ttcttcaagg	acgacggcaa	7260
ctacaagacc	cgcgccgagg	tgaagtccga	ggcgacacc	ctggtgaacc	gcatcgagct	7320
gaagggcatc	gacttcaagg	aggacggcaa	catcctgggg	cacaagctgg	agtacaacta	7380
caacagccac	aacgtctata	tcatggccga	caagcagaag	aacggcatca	aggtgaactt	7440
caagatccgc	cacaacatcg	aggacggcag	cgatcgagctc	gccgaccact	accagcagaa	7500
cacccccatc	ggcgacggcc	ccgtgctgct	gcccgacaac	cactacctga	gcaccagtc	7560
cgccctgagc	aaagacccca	acgagaagcg	cgatcacatg	gtcctgctgg	agttcgtgac	7620
cgccgcccgg	atcactctcg	gcatggacga	gctgtacaag	taaagcggcc	gcgtcgacaa	7680
tcaacctctg	gattacaaaa	tttgtgaaag	attgactggt	attcttaact	atgttgctcc	7740
ttttacgcta	tgtggatacg	ctgctttaat	gcctttgtat	catgctattg	cttcccgtat	7800
ggctttcatt	ttctcctcct	tgtataaatc	ctggttgctg	tctctttatg	aggagtgtg	7860
gcccgttgtc	aggcaacgtg	gcgtgggtg	cactgtgttt	gctgacgcaa	ccccactgg	7920
ttggggcatt	gccaccacct	gtcagctcct	ttccgggact	ttcgctttcc	ccctccctat	7980
tgccacggcg	gaactcatcg	ccgcctgcct	tgcccgtgct	tggacagggg	ctcggctgtt	8040
gggcactgac	aattccgtgg	tgttgtcggg	gaagctgacg	tcctttccat	ggctgctcgc	8100
ctgtgttgcc	acctggattc	tgcgcgggac	gtccttctgc	tacgtccctt	cggccctcaa	8160
tccagcggac	cttccttccc	gcggcctgct	gccggctctg	cggcctcttc	cgcgcttctg	8220
ccttcgccct	cagacgagtc	ggatctccct	ttgggcccgc	tccccgcctg	gaattcgagc	8280
tcggtacctt	taagaccaat	gacttacaag	gcagctgtag	atcttagcca	ctttttaaaa	8340
gaaaaggggg	gactggaagg	gctaattcac	tccaacgaa	gacaagatct	gctttttgct	8400
tgtactgggt	ctctctgggt	agaccagatc	tgagcctggg	agctctctgg	ctaactaggg	8460
aacccactgc	ttaagcctca	ataaagcttg	ccttgagtgc	ttcaagtagt	gtgtgcccgt	8520
ctgttgtgtg	actctggtaa	ctagagatcc	ctcagaccct	tttagtcagt	gtggaaaatc	8580
tctagcagta	gtagttcatg	tcatcttatt	attcagtatt	tataacttgc	aaagaaatga	8640
atatcagaga	gtgagaggaa	cttgtttatt	gcagcttata	atggttacia	ataaagcaat	8700

Nalдини.ST25

agcatcacaa atttcacaaa taaagcattt ttttcactgc atttctagttg tggtttgtcc	8760
aaactcatca atgtatctta tcatgtctgg ctctagctat cccgccccta actccgcca	8820
gttccgcccc ttctccgccc catggctgac taattttttt tatttatgca gaggccgagg	8880
ccgcctcggc ctctgagcta ttccagaagt agtgaggagg ctttttttga ggcctaggct	8940
tttgcgtcga gacgtacca attcggccta tagtgagtcg tattacgcgc gctcactggc	9000
cgtcgtttta caacgtcgtg actgggaaaa ccctggcggt acccaactta atcgccttgc	9060
agcacatccc cttttcgcca gctggcgtaa tagcgaagag gcccgcaccg atcgcccttc	9120
ccaacagttg cgcagcctga atggcgaatg gcgcgacgcg ccctgtagcg gcgcattaag	9180
cgcgggcggg gtgggtggta cgcgcagcgt gaccgctaca cttgccagcg ccctagcgcc	9240
cgctcctttc gctttcttcc cttcctttct cgccacgttc gccggctttc cccgtcaagc	9300
tctaaatcgg gggctccctt tagggttccg atttagtgct ttacggcacc tcgaccccaa	9360
aaaacttgat tagggtgatg gttcacgtag tgggccatcg ccctgataga cggtttttcg	9420
ccctttgacg ttggagtcca cgttctttaa tagtggactc ttgttccaaa ctggaacaac	9480
actcaaccct atctcgggtct attcttttga tttataaggg attttgccga tttcggccta	9540
ttggttaaaa aatgagctga tttaacaaaa atttaacgcg aattttaaca aaatattaac	9600
gtttacaatt tcc	9613

<210> 5

<211> 9380

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid

<220>

<221> misc_feature

<222> (1)..(9380)

<223>

<220>

<221> misc_feature

<222> (1)..(9380)

<223> plasmid containing the lentiviral vector construct CCL-MA1-GFP/de
ltaLNGFR

<400> 5

```

cagggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttatTT ttctaaatac      60
attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa      120
aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt tttgcggcat      180
tttgccttcc tgTTTTtTgct caccagaaa cgctggtgaa agtaaaagat gctgaagatc      240
agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag atccttgaga      300
gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg ctatgtggcg      360
cggattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata cactattctc      420
agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat ggcatgacag      480
taagagaatt atgcagtgct gccataacca tgagtgataa cactgcggcc aacttacttc      540
tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg ggggatcatg      600
taactcgctt tgatcgttgg gaaccggagc tgaatgaagc cataccaaac gacgagcgtg      660
acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact ggcgaactac      720
ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa gttgcaggac      780
cacttctgcg ctcggccctt ccggctggct ggtttattgc tgataaatct ggagccggtg      840
agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaaagccc tcccgtatcg      900
tagttatcta cacgacgggg agtcaggcaa ctatggatga acgaaataga cagatcgctg      960
agataggtgc ctactgatt aagcattggt aactgtcaga ccaagtttac tcatatatac     1020
tttagattga tttaaaactt catttttaat ttaaaaggat ctaggatgaag atcctttttg     1080
ataatctcat gacaaaaatc ccttaacgtg agttttcggt ccactgagcg tcagacccccg     1140
tagaaaagat caaaggatct tcttgagatc ctttttttct gcgcgtaatc tgctgcttgc     1200
aaacaaaaaa accaccgcta ccagcgggtg tttgtttgcc ggatcaagag ctaccaactc     1260
tttttccgaa ggtaactggc ttcagcagag cgagataacc aaatactgtc cttctagtgt     1320
agccgtagtt aggccaccac ttcaagaact ctgtagcacc gcctacatac ctcgctctgc     1380
taatcctgtt accagtggct gctgccagtg gcgataagtc gtgtcttacc gggttggact     1440
caagacgata gttaccggat aaggcgcagc ggtcgggctg aacggggggg tcgtgcacac     1500
agcccagctt ggagcgaacg acctacaccg aactgagata cctacagcgt gagctatgag     1560
aaagcgccac gcttcccga gggagaaagg cggacaggta tccggtaagc ggcagggctc     1620
gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt tatagtcctg     1680
tcgggttttcg ccacctctga cttgagcgtc gattttttgtg atgctcgtca ggggggcgga     1740

```

Naldini.ST25

gcctatggaa	aaacgccagc	aacgcggcct	ttttacggtt	cctggccttt	tgctggcctt	1800
ttgctcacat	gttcttttct	gcgttatccc	ctgattctgt	ggataaccgt	attaccgcct	1860
ttgagtgagc	tgataccgct	cgccgcagcc	gaacgaccga	gcgcagcgag	tcagtgagcg	1920
aggaagcgga	agagcgccca	atacgcaaac	cgccttctccc	cgcgcgttgg	ccgattcatt	1980
aatgcagctg	gcacgacagg	tttccccgact	ggaaagcggg	cagtgagcgc	aacgcaatta	2040
atgtgagtta	gctcactcat	taggcacccc	aggctttaca	ctttatgctt	ccggctcgtg	2100
tgttgtgtgg	aattgtgagc	ggataacaat	ttcacacagg	aaacagctat	gaccatgatt	2160
acgccaaagcg	cgcaattaac	cctcactaaa	gggaacaaaa	gctggagctg	caagcttggc	2220
cattgcatac	gttgatatcca	tatcataata	tgtacattta	tattggctca	tgtccaacat	2280
taccgccatg	ttgacattga	ttattgacta	gttattaata	gtaatcaatt	acgggggtcat	2340
tagttcatag	cccatatatg	gagttccgcg	ttacataact	tacggtaa	ggccccgcctg	2400
gctgaccgcc	caacgacccc	cgcccattga	cgtcaataat	gacgtatgtt	cccatagtaa	2460
cgccaatagg	gactttccat	tgacgtcaat	gggtggagta	tttacggtaa	actgcccact	2520
tggcagtaca	tcaagtgtat	catatgccaa	gtacgcccc	tattgacgtc	aatgacggta	2580
aatggcccg	ctggcattat	gcccagtaca	tgaccttatg	ggactttcct	acttggcagt	2640
acatctacgt	attagtcatc	gctattacca	tggatgatgcg	gttttggcag	tacatcaatg	2700
ggcgtggata	gcggtttgac	tcacggggat	ttccaagtct	ccacccatt	gacgtcaatg	2760
ggagtttgtt	ttggcaccaa	aatcaacggg	actttccaaa	atgtcgtaac	aactccgccc	2820
cattgacgca	aatgggcggt	aggcgtgtac	ggtgggaggt	ctatataagc	agagctcgtt	2880
tagtgaaccg	gggtctctct	ggttagacca	gatctgagcc	tgggagctct	ctggctaact	2940
agggaaacca	ctgcttaagc	ctcaataaag	cttgcccttga	gtgcttcaag	tagtgtgtgc	3000
ccgtctgttg	tgtgactctg	gtaactagag	atccctcaga	cccttttagt	cagtgtggaa	3060
aatctctagc	agtggcgccc	gaacagggac	ctgaaagcga	aagggaaacc	agagctctct	3120
cgacgcagga	ctcggcttgc	tgaagcgcgc	acggcaagag	gcgagggg	gcgactggtg	3180
agtacgcaa	aaattttgac	tagcggaggc	tagaaggaga	gagatgggtg	cgagagcgtc	3240
agtattaagc	gggggagaat	tagatcgcg	tgggaaaaaa	ttcggttaag	gccaggggga	3300
aagaaaaaat	ataaattaaa	acatatagta	tgggcaagca	gggagctaga	acgattcgca	3360
gttaatcctg	gcctgttaga	aacatcagaa	ggctgtagac	aaatactggg	acagctacaa	3420
ccatcccttc	agacaggatc	agaagaactt	agatcattat	ataatacagt	agcaaccctc	3480
tattgtgtgc	atcaaaggat	agagataaaa	gacaccaagg	aagctttaga	caagatagag	3540
gaagagcaaa	acaaaagtaa	gaccaccgca	cagcaagcgg	ccgctgatct	tcagacctgg	3600

Naldini.ST25

aggaggagat atgagggaca attggagaag tgaattatat aaatataaag tagtaaaaaat	3660
tgaaccatta ggagtagcac ccaccaaggc aaagagaaga gtggtgcaga gagaaaaaag	3720
agcagtggga ataggagctt tgttccttgg gttcttggga gcagcaggaa gcactatggg	3780
cgcagcctca atgacgctga cggtagaggc cagacaatta ttgtctggta tagtgcagca	3840
gcagaacaat ttgctgaggg ctattgaggc gcaacagcat ctgttgcaac tcacagtctg	3900
gggcatcaag cagctccagg caagaatcct ggctgtggaa agatacctaa aggatcaaca	3960
gctcctgggg atttgggggt gctctggaaa actcatttgc accactgctg tgccttggaa	4020
tgctagttag agtaataaat ctctggaaca gattggaatc acacgacctg gatggagtgg	4080
gacagagaaa ttaacaatta cacaagctta atacactcct taattgaaga atcgcaaaac	4140
cagcaagaaa agaataaaca agaattattg gaattagata aatgggcaag tttgtggaat	4200
tggtttaaca taacaaattg gctgtggtat ataaaattat tcataatgat agtaggaggc	4260
ttggtaggtt taagaatagt ttttgcctga ctttctatag tgaatagagt taggcaggga	4320
tattcaccat tatcgtttca gaccacctc ccaaccccga ggggacccga caggcccga	4380
ggaatagaag aagaaggtgg agagagagac agagacagat ccattcgatt agtgaacgga	4440
tctcgacggt atcggttaac ttttaaaaga aaagggggga ttggggggta cagtgcaggg	4500
gaaagaatag tagacataat agcaacagac atacaaacta aagaattaca aaaacaaatt	4560
acaaaaattc aaaattttat cgatcacgag actagcctcg agagatctga tcataatcag	4620
ccataccaca tttgtagagg ttttacttgc tttaaaaaac ctcccacacc tccccctgaa	4680
cctgaaacat aaaatgaatg caattgttgt tgtaacttg tttattgcag cttataatgg	4740
ttacaaataa ggcaatagca tcacaaattt cacaataaag gcattttttt cactgcattc	4800
tagttttggt ttgtccaaac tcatcaatgt atcttatcat gtctggatct caaatccctc	4860
ggaagctgcg cctgtcttag gttggagtga tacattttta tcacttttac ccgtctttgg	4920
attaggcagt agctctgacg gccctcctgt cttagggttag tgaaaaatgt cactctctta	4980
cccgtcattg gctgtccagc ttagctcgca ggggaggtgg tctggatccg agctcgaatt	5040
ggccgcttta cttgtacagc tcgtccatgc cgagagtgat cccggcggcg gtcacgaact	5100
ccagcaggac catgtgatcg cgcttctcgt tggggtcttt gctcagggcg gactgggtgc	5160
tcaggtagtg gttgtcgggc agcagcacgg ggccgtcgcc gatgggggtg ttctgctggt	5220
agtggtcggc gagctgcacg ctgccgtcct cgatgttgtg gcggatcttg aagttcacct	5280
tgatgccgtt cttctgcttg tcggccatga tatagacgtt gtggctgttg tagttgtact	5340
ccagcttggt ccccaggatg ttgccgtcct ccttgaagtc gatgcccttc agctcgaatg	5400
ggttcaccag ggtgtcgccc tcgaacttca cctcggcgcg ggtctttag ttgccgtcgt	5460
ccttgaagaa gatggtgcgc tcctggacgt agccttcggg catggcggac ttgaagaagt	5520

Naldini.ST25

cgtgctgctt	catgtggtcg	gggtagcggc	tgaagcactg	cacgccgtag	gtcaggggtgg	5580
tcacgaggggt	gggccagggc	acgggcagct	tgccggtggt	gcagatgaac	ttcaggggtca	5640
gcttgccgta	ggtggcatcg	ccctcgccct	cgccggacac	gctgaacttg	tggccgttta	5700
cgtcgccgtc	cagctcgacc	aggatgggca	ccaccccggt	gaacagctcc	tcgcccttgc	5760
tcaccatggt	gaattccgcg	gaggctggat	cggtcccggg	gtcttctatg	gaggtcaaaa	5820
cagcgtggat	ggcgtctcca	ggcgatctga	cggttacta	aacgagctct	gcttatatag	5880
gcctcccacc	gtacacgcct	accctcgaga	agcttgatat	cgaattccca	cggggttggg	5940
gttgcgctt	ttccaaggca	gccctggggt	tgcgcaggga	cgcggtctgct	ctgggcgtgg	6000
ttccgggaaa	cgcagcggcg	ccgaccctgg	gtctcgaca	ttcttcacgt	ccgttcgcag	6060
cgtcaccg	atcttcgccg	ctacccttgt	gggcccccg	gcgacgcttc	ctgctccgcc	6120
cctaagtcgg	gaaggttcct	tgcggttcgc	ggcgtgccgg	acgtgacaaa	cggaagccgc	6180
acgtctcact	agtaccctcg	cagacggaca	gcgccaggga	gcaatggcag	cgcgccgacc	6240
gcgatgggct	gtggccaata	gcggctgctc	agcggggcgc	gccgagagca	gcggccggga	6300
aggggcgggtg	cgggaggcgg	ggtgtggggc	ggtagtgtgg	gccctgttcc	tgcccgcgcg	6360
gtgttccgca	ttctgcaagc	ctccggagcg	cacgtcggca	gtcggctccc	tcgttgaccg	6420
aatcaccgac	ctctctccc	agggggatcc	cccgggctgc	aggaattcgg	gccgcggcca	6480
gctccggcgg	gcaggggggg	cgctggagcg	cagcgcagcg	cagccccatc	agtccgcaaa	6540
gcggaccgag	ctggaagtcg	agcgtgccg	cgggaggcgg	gcgatggggg	caggtgccac	6600
cggccgcgcc	atggacgggc	cgcgcctgct	gctgttgctg	cttctggggg	tgtcccttgg	6660
aggtgccaa	gaggcatgcc	ccacaggcct	gtacacacac	agcggtgagt	gctgcaaagc	6720
ctgcaacctg	ggcgaggggtg	tggcccagcc	ttgtggagcc	aaccagaccg	tgtgtgagcc	6780
ctgcctggac	agcgtgacgt	tctccgacgt	ggtgagcgcg	accgagccgt	gcaagccgtg	6840
caccgagtgc	gtggggctcc	agagcatgtc	ggcgccgtgc	gtggaggccg	acgacgccgt	6900
gtgccgctgc	gcctacggct	actaccagga	tgagacgact	gggcgctgcg	aggcgtgccg	6960
cgtgtgcgag	gcgggctcgg	gcctcgtgtt	ctcctgccag	gacaagcaga	acaccgtgtg	7020
cgaggagtgc	cccgcaggca	cgtattccga	cgaggccaac	cacgtggacc	cgtgcctgcc	7080
ctgcaccgtg	tgcgaggaca	ccgagcgcca	gctccgcgag	tgacacacgct	gggccgacgc	7140
cgagtgcgag	gagatccctg	gccgttggat	tacacggtcc	acacccccag	agggctcggg	7200
cagcacagcc	cccagcaccc	aggagcctga	ggcacctcca	gaacaagacc	tcatagccag	7260
cacggtggca	ggtgtggtga	ccacagtgat	gggcagctcc	cagcccgtgg	tgacccgagg	7320
caccaccgac	aacctcatcc	ctgtctattg	ctccatcctg	gctgctgtgg	ttgtgggcct	7380

Naldini.ST25

tgtggcctac	atagccttca	agaggtggaa	cagggggatc	ctctagagtc	gagtctagag	7440
tcgacaatca	acctctggat	tacaaaattt	gtgaaagatt	gactgggtatt	cttaactatg	7500
ttgctccttt	tacgctatgt	ggatacgctg	ctttaatgcc	tttgtatcat	gctatttgctt	7560
cccgtatggc	tttcattttc	tcctccttgt	ataaatcctg	gttgctgtct	ctttatgagg	7620
agttgtggcc	cgttgtcagg	caacgtggcg	tgggtgtcac	tgtgtttgct	gacgcaaccc	7680
ccactgggtg	gggcattgcc	accacctgtc	agctcctttc	cgggactttc	gctttccccc	7740
tccctattgc	cacggcgga	ctcatcgccg	cctgccttgc	ccgctgctgg	acaggggctc	7800
ggctgttggg	cactgacaat	tccgtggtgt	tgtcggggaa	gctgacgtcc	tttccatggc	7860
tgctcgctg	tgttgccacc	tggattctgc	gcgggacgtc	cttctgctac	gtcccttcgg	7920
ccctcaatcc	agcggacctt	ccttcccgcg	gcctgctgcc	ggctctgcgg	cctcttccgc	7980
gtcttcgcct	tcgccctcag	acgagtcgga	tctccctttg	ggccgcctcc	ccgcctggaa	8040
ttcgagctcg	gtacctttaa	gaccaatgac	ttacaaggca	gctgtagatc	ttagccactt	8100
tttaaaagaa	aagggggggac	tggaagggct	aattcactcc	caacgaagac	aagatctgct	8160
ttttgcttgt	actgggtctc	tctggttaga	ccagatctga	gcctgggagc	tctctggcta	8220
actagggaa	ccactgctta	agcctcaata	aagcttgctt	tgagtgcctc	aagtagtggt	8280
tgcccgtctg	ttgtgtgact	ctggtaaacta	gagatccctc	agaccctttt	agtcagtgtg	8340
gaaaatctct	agcagtagta	gttcatgtca	tcttattatt	cagtatttat	aacttgcaaa	8400
gaaatgaata	tcagagagt	agaggaactt	gtttattgca	gcttataatg	gttacaaata	8460
aagcaatagc	atcacaaatt	tcacaaataa	agcatttttt	tcactgcatt	ctagttgtgg	8520
tttgtccaaa	ctcatcaatg	tatcttatca	tgtctggctc	tagctatccc	gcccctaact	8580
ccgcccagtt	ccgcccattc	tccgccccat	ggctgactaa	ttttttttat	ttatgcagag	8640
gccgaggccg	cctcggcctc	tgagctattc	cagaagtagt	gaggaggctt	ttttggaggc	8700
ctaggccttt	gcgtcgagac	gtacccaatt	cgccctatag	tgagtcgtat	tacgcgcgct	8760
cactggccgt	cgttttacaa	cgtcgtgact	gggaaaacc	tggcgttacc	caacttaatc	8820
gccttgtagc	acatccccct	ttcgccagct	ggcgtaatag	cgaagaggcc	cgcaccgatc	8880
gcccttccca	acagttgctc	agcctgaatg	gcgaatggcg	cgacgcgccc	tgtagcggcg	8940
cattaagcgc	ggcgggtgtg	gtggttacgc	gcagcgtgac	cgctacactt	gccagcgccc	9000
tagcggccgc	tcctttcgct	ttcttccctt	cctttctcgc	cacgttcgcc	ggctttcccc	9060
gtcaagctct	aaatcggggg	ctcccttttag	ggttccgatt	tagtgcttta	cggcacctcg	9120
accccaaaaa	acttgattag	ggtgatggtt	cacgtagtgg	gccatcgccc	tgatagacgg	9180
tttttcgccc	tttgacgttg	gagtccacgt	tctttaatag	tggactcttg	ttccaaactg	9240
gaacaacact	caaccctatc	tcggtctatt	cttttgattt	ataagggatt	ttgccgattt	9300

Naldini.ST25

cggcctattg gttaaaaaat gagctgattt aacaaaaatt taacgcgaat ttaacaaaa 9360
tattaacggt tacaatttcc 9380

<210> 6

<211> 9718

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid

<220>

<221> misc_feature

<222> (1)..(9718)

<223>

<220>

<221> misc_feature

<222> (1)..(9718)

<223> plasmid containing the lentiviral vector construct RRL-MA2-lucif/
GFP

<400> 6

caggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttattt ttctaaatac 60
attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa 120
aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt ttgcgggcat 180
tttgccttcc tgtttttgct caccagaaa cgctggtgaa agtaaaagat gctgaagatc 240
agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag atccttgaga 300
gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg ctatgtggcg 360
cggtattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata cactattctc 420
agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat ggcattgacag 480
taagagaatt atgcagtgtc gccataacca tgagtataaa cactgcggcc aacttacttc 540
tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg ggggatcatg 600
taactcgctt tgatcgttgg gaaccggagc tgaatgaagc cataccaaac gacgagcgtg 660

Naldini.ST25

acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact ggcgaactac	720
ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa gttgcaggac	780
cacttctgcg ctcggccctt ccggctggct ggtttattgc tgataaatct ggagccggtg	840
agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaagccc tcccgtatcg	900
tagttatcta cacgacgggg agtcaggcaa ctatggatga acgaaataga cagatcgctg	960
agataggtgc ctactgatt aagcattggt aactgtcaga ccaagtttac tcatatatac	1020
tttagattga tttaaaactt catttttaat ttaaaaggat ctaggtgaag atcctttttg	1080
ataatctcat gaccaaaatc ccttaacgtg agttttcgtt ccactgagcg tcagacccccg	1140
tagaaaagat caaaggatct tcttgagatc ctttttttct gcgcgtaatc tgctgcttgc	1200
aaacaaaaaa accaccgcta ccagcgggtg tttgtttgcc ggatcaagag ctaccaactc	1260
tttttccgaa ggtaactggc ttcagcagag cgcagatacc aaatactgtc cttctagtgt	1320
agccgtagtt aggccaccac ttcaagaact ctgtagcacc gcctacatac ctcgctctgc	1380
taatcctgtt accagtggct gctgccagtg gcgataagtc gtgtcttacc gggttggact	1440
caagacgata gttaccggat aaggcgcagc ggtcgggctg aacgggggggt tcgtgcacac	1500
agcccagctt ggagcgaacg acctacaccg aactgagata cctacagcgt gagctatgag	1560
aaagcgccac gcttcccga gggagaaagg cggacaggta tccggtaagc ggcagggctc	1620
gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt tatagtcctg	1680
tcgggtttcg ccacctctga cttgagcgtc gatttttgtg atgctcgtca ggggggcgga	1740
gcctatggaa aaacgccagc aacgcggcct ttttacggtt cctggccttt tgctggcctt	1800
ttgctcacat gttctttcct gcgttatccc ctgattctgt ggataaccgt attaccgcct	1860
ttgagtgagc tgataccgct cgccgcagcc gaacgaccga gcgcagcgag tcagtgagcg	1920
aggaagcgga agagcgcca atacgcaaac cgctctccc cgcgcgttgg ccgattcatt	1980
aatgcagctg gcacgacagg tttcccgact ggaaagcggg cagtgagcgc aacgcaatta	2040
atgtgagtta gctcactcat taggcacccc aggcctttaca ctttatgctt ccggctcgta	2100
tgttgtgtgg aattgtgagc ggataacaat ttcacacagg aaacagctat gaccatgatt	2160
acgccaagcg cgcaattaac cctcactaaa gggaacaaaa gctggagctg caagcttaat	2220
gtagtcttat gcaatactct tgtagtcttg caacatggta acgatgagtt agcaacatgc	2280
cttacaagga gagaaaaagc accgtgcatg ccgattgggtg gaagtaagggt ggtacgatcg	2340
tgcttatta ggaaggcaac agacgggtct gacatggatt ggacgaacca ctgaattgcc	2400
gcattgcaga gatattgtat ttaagtgcct agctcgatac aataaacggg tctctctggt	2460
tagaccagat ctgagcctgg gagctctctg gctaactagg gaaccactg cttaagcctc	2520

Naldini.ST25

aataaaagctt	gccttgagtg	cttcaagtag	tgtgtgcccc	tctgttgtgt	gactctggta	2580
actagagatc	cctcagaccc	ttttagtcag	tgtggaaaat	ctctagcagt	ggcgcccgaa	2640
cagggacctg	aaagcgaaaag	ggaaaccaga	gctctctcga	cgaggagactc	ggcttgctga	2700
agcgcgcacg	gcaagaggcg	aggggaggcg	actggtgagt	acgccaaaaa	ttttgactag	2760
cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	ggagaattag	2820
atcgcgatgg	gaaaaaattc	ggtaaggcc	agggggaaaag	aaaaaatata	aattaaaca	2880
tatagtatgg	gcaagcaggg	agctagaacg	attcgagtt	aatcctggcc	tgtagaaac	2940
atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	caggatcaga	3000
agaacttaga	tcattatata	atacagtagc	aacctctat	tgtgtgcatc	aaaggataga	3060
gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaaca	aaagtaagac	3120
caccgcacag	caagcggccg	ctgatcttca	gacctggagg	aggagatatg	agggacaatt	3180
ggagaagtga	attatataaa	tataaagtag	taaaaattga	accattagga	gtagcaccca	3240
ccaaggcaaa	gagaagagtg	gtgcagagag	aaaaaagagc	agtgggaata	ggagctttgt	3300
tccttgggtt	cttgggagca	gcaggaagca	ctatgggagc	agcctcaatg	acgctgacgg	3360
tacaggccag	acaattattg	tctggtatag	tgcagcagca	gaacaatttg	ctgagggcta	3420
ttgaggcgca	acagcatctg	ttgcaactca	cagtctgggg	catcaagcag	ctccaggcaa	3480
gaatcctggc	tgtggaaaga	tacctaaagg	atcaacagct	cctggggatt	tggggttgct	3540
ctggaaaact	catttgcacc	actgctgtgc	cttggaatgc	tagttggagt	aataaatctc	3600
tggaacagat	tggaatcaca	cgacctggat	ggagtgggac	agagaaaatta	acaattacac	3660
aagcttaata	cactccttaa	ttgaagaatc	gcaaaaccag	caagaaaaga	atgaacaaga	3720
attattggaa	ttagataaat	gggcaagttt	gtggaattgg	tttaacataa	caaattggct	3780
gtggtatata	aaattattca	taatgatagt	aggaggcttg	gtaggtttaa	gaatagtttt	3840
tgctgtactt	tctatagtga	atagagttag	gcagggatat	tcaccattat	cgtttcagac	3900
ccacctccca	accccgaggg	gacctgacag	gcccgaagga	atagaagaag	aagggtggaga	3960
gagagacaga	gacagatcca	ttcgattagt	gaacggatct	cgacggtatc	ggttaacttt	4020
taaaagaaaa	ggggggattg	gggggtacag	tgcaggggaa	agaatagtag	acataatagc	4080
aacagacata	caaactaaag	aattacaaaa	acaaattaca	aaaattcaaa	attttatcga	4140
tcacgagact	agcctcgaga	gatctgatca	taatcagcca	taccacattt	gtagagggtt	4200
tacttgcttt	aaaaaacctc	ccacacctcc	ccctgaacct	gaaacataaa	atgaatgcaa	4260
ttgttgttgt	taacttgttt	attgcagctt	ataatgggta	caaataaggc	aatagcatca	4320
caaatttcac	aaataaggca	tttttttcac	tgcatcttag	ttttggtttg	tccaaactca	4380
tcaatgtatc	ttatcatgtc	tggatctcaa	atccctcgga	agctgagcct	gtcttagggt	4440

Naldini.ST25

ggagtgatac	atTTTTatca	cttttaccCG	tctttggatt	aggcagtagc	tctgacggcc	4500
ctcctgtctt	aggttagtga	aaaatgtcac	tctcttaccC	gtcattggct	gtccagctta	4560
gctcgaggg	gaggtggct	ggatccctgg	atatcaagaa	ttcgtcctcg	agctcagatc	4620
ctctagaatt	acacggcgat	ctttccgccc	ttcttggcct	ttatgaggat	ctctctgatt	4680
tttcttgCGt	cgagttttcc	ggtaagacct	ttcgggtactt	cgtccacaaa	cacaactcct	4740
ccgCGcaact	ttttcgCGgt	tgttacttga	ctggccacgt	aatccacgat	ctctttttcc	4800
gtcatcgtct	ttccgtgctc	caaaacaaca	acggcgggcg	gaagttcacc	ggcgtcatcg	4860
tcgggaagac	ctgcgacacc	tgcgtcgaag	atgttgggggt	gttggagcaa	gatggattcc	4920
aattcagCGg	gagccacctg	atagcctttg	tacttaataca	gagacttcag	gcggtcaacg	4980
atgaagaagt	gttcgtcttc	gtcccagtaa	gctatgtctc	cagaatgtag	ccatccatcc	5040
ttgtcaatca	aggCGttgggt	cgcttccgga	ttgtttacat	aaccggacat	aatcatagga	5100
cctctcacac	acagttcGCC	tctttgatta	acgcccagcg	ttttccCGgt	atccagatcc	5160
acaaccttcg	cttcaaaaaa	tggaacaact	ttaccgaccg	cgccCGgttt	atcatcccc	5220
tcgggtgtaa	tcagaatagc	tgatgtagtc	tcagtgaGCC	catatccttg	cctgatacct	5280
ggcagatgga	acctcttggc	aaccgcttcc	ccgacttcct	tagagagggg	agcgccacca	5340
gaagcaattt	cgtgtaaatt	agataaatcg	tatttgtcaa	tcagagtgtc	tttggcgaag	5400
aaggagaata	gggttggcac	cagcagcgca	ctttgaatct	tgtaatcctg	aaggctcctc	5460
agaaacagct	cttcttcaaa	tctatacatt	aagacgactc	gaaatccaca	tatcaaatat	5520
ccgagtgtag	taaacattcc	aaaaccgtga	tggaatggaa	caacacttaa	aatcgagta	5580
tccggaatga	tttgattgcc	aaaaatagga	tctctggcat	gcgagaatct	cacgcaggca	5640
gttctatgag	gcagagcgac	acctttaggc	agaccagtag	atccagagga	gttcatgac	5700
agtGcaattg	tcttgtccct	atcgaaggac	tctggcacia	aatcgtattc	attaaaaccg	5760
ggaggtagat	gagatgtgac	gaacgtgtac	atcgactgaa	atccctggta	atccgtttta	5820
gaatccatga	taataatttt	ttggatgatt	gggagctttt	tttgacggtt	caaaattttt	5880
tGcaaccctt	ttttggaaac	gaacaccacg	gtaggctgCG	aaatgccc	actgttgagc	5940
aattcacgtt	cattataaat	gtcgttcgCG	ggcgcaactg	caactccgat	aaataacgCG	6000
cccaacaccg	gcataaagaa	ttgaagagag	ttttcactgc	atacgacgat	tctgtgattt	6060
gtattcagcc	catatcgttt	catagcttct	gccaaaccgaa	cggacatttc	gaagtactca	6120
gcgtaagtga	tgtccacctc	gatatgtgca	tctgtaaaag	caattgttcc	aggaaccagg	6180
gcgtatctct	tcatagcctt	atgcagttgc	tctccagcgCG	ttccatcttc	cagcggatag	6240
aatggcgCGg	ggcctttctt	tatgtttttg	gcgtctttcca	tgggtgaattc	cgatccccct	6300

Naldini.ST25

ggggagagag gtcggtgatt cgggtcaacga gggagccgac tgccgacgtg cgctccggag	6360
gcttgagaaa tgcggaacac cgcgcgggca ggaacagggc ccacactacc gccccacacc	6420
ccgcctcccc caccgccccct tcccggccgc tgctctcggc gcgccccgct gagcagccgc	6480
tattggccac agcccatcgc ggtcggcgcg ctgccattgc tccctggcg tgtccgtctg	6540
cgaggggtact agtgagacgt gcggcttccg tttgtcacgt ccggcacgcc gcgaaccgca	6600
aggaaccttc ccgacttagg ggcgaggcag gaagcgtcgc cggggggccc acaagggtag	6660
cggcgaagat ccgggtgacg ctgcgaacgg acgtgaagaa tgtgcgagac ccagggctcg	6720
cgccgctcgc tttcccggaa ccacgcccag agcagccgcg tccctgcgca aaccagggc	6780
tgccctggaa aaggcgcaac cccaaccccg tgggaattcg atatcaagct tgcctatgtt	6840
cttttggaa ctatccaagt cttatgtaaa tgcttatgta aaccataata taaaagagt	6900
ctgatttttt gagtaaaactt gcaacagtcc taacattctt ctctcgtgtg tttgtgtctg	6960
ttcgccatcc cgtctccgct cgtcacttat ccttcacttt tcagaggggc ccccccgcaga	7020
tcccggtcac cctcaggtcg ggtcgacaac catggtgagc aagggcgagg agctgttcac	7080
cggggtggtg cccatcctgg tcgagctgga cggcgacgta aacggccaca agttcagcgt	7140
gtccggcgag ggcgagggcg atgccaccta cggcaagctg accctgaagt tcattctgcac	7200
caccggcaag ctgcccgtgc cctggcccac cctcgtgacc accctgacct acggcgtgca	7260
gtgcttcagc cgctaccccc accacatgaa gcagcacgac ttcttcaagt ccgcatgcc	7320
cgaaggctac gtccaggagc gcaccatctt cttcaaggac gacggcaact acaagacccg	7380
cgccgaggtg aagttcgagg gcgacaccct ggtgaaccgc atcgagctga agggcatcga	7440
cttcaaggag gacggcaaca tcctggggca caagctggag tacaactaca acagccacaa	7500
cgtctatatc atggccgaca agcagaagaa cggcatcaag gtgaacttca agatccgcca	7560
caacatcgag gacggcagcg tgcagctcgc cgaccactac cagcagaaca ccccatcgg	7620
cgacggcccc gtgctgctgc ccgacaacca ctacctgagc acccagtcgg ccctgagcaa	7680
agacccaac gagaagcgcg atcacatggt cctgctggag ttcgtgaccg ccgcccggat	7740
cactctcggc atggacgagc tgtacaagta aagcggcctc gacaatcaac ctctggatta	7800
caaaatttgt gaaagattga ctggtattct taactatgtt gtcctttta cgctatgtgg	7860
atacgtgct ttaatgcctt tgtatcatgc tattgcttcc cgtatggctt tcattttctc	7920
ctccttgat aaatcctggt tgctgtctct ttatgaggag ttgtggcccg ttgtcaggca	7980
acgtggcgtg gtgtgcactg tgtttgctga cgcaaccccc actggttggg gcattgccac	8040
cacctgtcag ctcccttccg ggactttcgc tttccccctc cctattgcca cggcggaact	8100
catcgccgcc tgccttgccc gctgctggac aggggctcgg ctgttgggca ctgacaattc	8160
cgtgggtgtg tcggggaagc tgacgtcctt tccatggctg ctgcctgtg ttgccacctg	8220

Naldini.ST25

gattctgctg	gggacgtcct	tctgctacgt	cccttcggcc	ctcaatccag	cggaccttcc	8280
ttccccgctg	ctgctgccgg	ctctgcggcc	tcttccgcgt	cttcgccttc	gccctcagac	8340
gagtcggatc	tcccttttgg	ccgcctcccc	gcctggaatt	cgagctcggg	acctttaaga	8400
ccaatgactt	acaaggcagc	tgtagatctt	agccactttt	taaaagaaaa	gggggggactg	8460
gaaggggctaa	ttcactccca	acgaagacaa	gatctgcttt	ttgcttgtag	tgggtctctc	8520
tggtttagacc	agatctgagc	ctgggagctc	tctggctaac	tagggaaccc	actgcttaag	8580
cctcaataaa	gcttgccctg	agtgcctcaa	gtagtgtgtg	cccgtctgtt	gtgtgactct	8640
ggtaactaga	gatccctcag	accctttttag	tcagtgtgga	aaatctctag	cagtagtagt	8700
tcatgtcatc	ttattattca	gtattttataa	cttgcaaaga	aatgaatatc	agagagttag	8760
aggaacttgt	ttattgcagc	ttataatggg	tacaaataaa	gcaatagcat	cacaaatttc	8820
acaaataaag	catttttttt	actgcattct	agttgtgggt	tgtccaaact	catcaatgta	8880
tcttatcatg	tctggctcta	gctatcccg	ccctaactcc	gccagttcc	gccattctc	8940
cgcccatg	ctgactaatt	ttttttat	atgcagaggc	cgaggccg	tcggcctctg	9000
agctattcca	gaagtagtga	ggaggctttt	ttggaggcct	aggcttttgc	gtcgagacgt	9060
acccaattcg	ccctatagtg	agtcgtatta	cgcgcgctca	ctggccgtcg	ttttacaacg	9120
tcgtgactgg	gaaaaccctg	gcgttaccca	acttaatcgc	cttgagcac	atccccctt	9180
cgccagctgg	cgtaatagcg	aagaggcccc	caccgatcgc	ccttcccaac	agttgcgcag	9240
cctgaatggc	gaatggcgcg	acgcgcccctg	tagcggcgca	ttaagcgcg	cggtgtgggt	9300
ggttacgcgc	agcgtgaccg	ctacacttgc	cagcgcccta	gcgcccgtc	ctttcgcttt	9360
cttcccttcc	tttctcgcca	cgttcgccgg	ctttccccgt	caagctctaa	atcggggggt	9420
cccttttaggg	ttccgattta	gtgcttttacg	gcacctcgac	cccaaaaaac	ttgattaggg	9480
tgatggttca	cgtagtgggc	catcgccctg	atagacgggt	tttcgccctt	tgacgttgga	9540
gtccacgttc	tttaatagtg	gactcttggt	ccaaactgga	acaacactca	accctatctc	9600
ggtctattct	tttgatttat	aagggatttt	gccgatttcg	gcctattggt	taaaaaatga	9660
gctgatttaa	caaaaattta	acgcgaattt	taacaaaata	ttaacgttta	caatttcc	9718

<210> 7

<211> 9490

<212> DNA

<213> Artificial Sequence

<220>

Naldini.ST25

<223> plasmid

<220>

<221> misc_feature

<222> (1)..(9490)

<223>

<220>

<221> misc_feature

<222> (1)..(9490)

<223> plasmid containing the lentiviral vector construct CCL-MA3-GFP/de
ItaLNGFR

<400> 7

caggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttat	60
tttctaaatac attcaaatat gtatccgctc atgagacaat aaccctgata	120
aatgcttcaa taatattgaa aaaggaagag tatgagtatt caacatttcc	180
gtgtcgcctt tattcccttt tttgcggcat tttgccttcc	240
tgtttttgct caccagaaa cgctggtgaa agtaaaagat gctgaagatc	300
agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag	360
atccttgaga gttttcgccc cgaagaacgt tttccaatga tgagcacttt	420
taaagttctg ctatgtggcg cggtattatc ccgtattgac	480
gccgggcaag agcaactcgg tcgccgcata cactattctc agaatgactt	540
ggttgagtac tcaccagtca cagaaaagca tcttacggat ggcattgacag	600
taagagaatt atgcagtgtc gccataacca tgagtataa cactgcggcc	660
aacttacttc tgacaacgat cggaggaccg aaggagctaa ccgctttttt	720
gcacaacatg ggggatcatg taactcgcct tgatcgttgg	780
gaaccggagc tgaatgaagc cataccaaac gacgagcgtg	840
acaccacgat gcctgtagca atggcaacaa cggtgcgcaa actattaact	900
ggcgaactac ttactctagc ttcccggcaa caattaatag actggatgga	960
ggcggataaa gttgcaggac cacttctgcg ctcggccctt	1020
ccggctggct gggtttattgc tgataaatct ggagccgggtg	1080
agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaagccc	1140
tcccgtatcg tagttatcta cacgacgggg agtcaggcaa ctatggatga	
acgaaataga cagatcgctg agataggtgc ctactgatt	
aagcatttgt aactgtcaga ccaagtttac tcatatatac	
tttagattga tttaaaactt catTTTTaat ttaaaaggat	
ctaggtgaag atcctTTTTg ataatctcat	
gacaaaaatc ccttaacgtg agtttttcgtt	
ccactgagcg tcagaccccg	

Naldini.ST25

tagaaaaagat	caaaggatct	tcttgagatc	ctttttttct	gcgcgtaatc	tgctgcttgc	1200
aaacaaaaaa	accaccgcta	ccagcggtag	tttgtttgcc	ggatcaagag	ctaccaactc	1260
tttttccgaa	ggtaactggc	ttcagcagag	cgcagatacc	aaatactgtc	cttctagtgt	1320
agccgtagtt	aggccaccac	ttcaagaact	ctgtagcacc	gcctacatac	ctcgcctctgc	1380
taatcctgtt	accagtggct	gctgccagt	gcgataagtc	gtgtcttacc	gggttggact	1440
caagacgata	gttaccggat	aaggcgcagc	ggtcgggctg	aacggggggg	tcgtgcacac	1500
agcccagctt	ggagcgaacg	acctacaccg	aactgagata	cctacagcgt	gagctatgag	1560
aaagcgccac	gcttcccga	gggagaaagg	cggacaggta	tccggtaagc	ggcagggctc	1620
gaacaggaga	gcgcacgagg	gagcttccag	ggggaaacgc	ctggtatctt	tatagtcctg	1680
tcgggtttcg	ccacctctga	cttgagcgtc	gattttttgt	atgctcgtca	ggggggcgga	1740
gcctatggaa	aaacgccagc	aacgcggcct	ttttacggtt	cctggccttt	tgctggcctt	1800
ttgctcacat	gttctttcct	gcgttatccc	ctgattctgt	ggataaccgt	attaccgcct	1860
ttgagtgagc	tgataaccgct	cgccgcagcc	gaacgaccga	gcgcagcgag	tcagtgagcg	1920
aggaagcgga	agagcgccca	atacgcaaac	cgcctctccc	cgcgcgttgg	ccgattcatt	1980
aatgcagctg	gcacgacagg	tttcccga	ggaaagcggg	cagtgagcgc	aacgcaatta	2040
atgtgagtta	gctcactcat	taggcacccc	aggctttaca	ctttatgctt	ccggctcgta	2100
tgttgtgtgg	aattgtgagc	ggataacaat	ttcacacagg	aaacagctat	gaccatgatt	2160
acgccaagcg	cgcaattaac	cctcactaaa	gggaacaaaa	gctggagctg	caagcttggc	2220
cattgcatac	gttgatatcca	tatcataata	tgtacattta	tattggctca	tgtccaacat	2280
taccgccatg	ttgacattga	ttattgacta	gttattaata	gtaatcaatt	acgggggtcat	2340
tagttcatag	cccatatatg	gagttccgcg	ttacataact	tacggtaa	ggccccgctg	2400
gctgaccgcc	caacgacccc	cgcccattga	cgtcaataat	gacgtatgtt	cccatagtaa	2460
cgccaatagg	gactttccat	tgacgtcaat	gggtggagta	tttacggtaa	actgcccact	2520
tggcagtaca	tcaagtgtat	catatgcaa	gtacgcccc	tattgacgtc	aatgacggta	2580
aatggccgc	ctggcattat	gcccagtaca	tgaccttatg	ggactttcct	acttggcagt	2640
acatctacgt	attagtcatc	gctattacca	tggtgatgcg	gttttggcag	tacatcaatg	2700
ggcgtggata	gcggtttgac	tcacggggat	ttccaagtct	ccacccatt	gacgtcaatg	2760
ggagtttgtt	ttggcaccaa	aatcaacggg	actttccaaa	atgtcgtaac	aactccgccc	2820
cattgacgca	aatgggcggg	aggcgtgtac	ggtgggaggt	ctatataagc	agagctcggt	2880
tagtgaaccg	gggtctctct	ggtagacca	gatctgagcc	tgggagctct	ctggctaact	2940
aggaaccca	ctgcttaagc	ctcaataaag	cttgccttga	gtgcttcaag	tagtgtgtgc	3000
ccgtctgttg	tgtgactctg	gtaactagag	atccctcaga	cccttttagt	cagtgtggaa	3060

Naldini.ST25

aatctctagc	agtggcgccc	gaacagggac	ctgaaagcga	aagggaaacc	agagctctct	3120
cgacgcagga	ctcggcttgc	tgaagcgcgc	acggcaagag	gcgaggggcg	gcgactggtg	3180
agtacgcca	aaattttgac	tagcggaggc	tagaaggaga	gagatgggtg	cgagagcgtc	3240
agtattaagc	gggggagaat	tagatcgcg	tgggaaaaaa	ttcggttaag	gccaggggga	3300
aagaaaaaat	ataaattaaa	acatatagta	tgggcaagca	gggagctaga	acgattcgca	3360
gttaatcctg	gcctgttaga	aacatcagaa	ggctgtagac	aaatactggg	acagctacaa	3420
ccatcccttc	agacaggatc	agaagaactt	agatcattat	ataatacagt	agcaaccctc	3480
tattgtgtgc	atcaaaggat	agagataaaa	gacaccaagg	aagctttaga	caagatagag	3540
gaagagcaaa	acaaaagtaa	gaccaccgca	cagcaagcgg	ccgctgatct	tcagacctgg	3600
aggaggagat	atgagggaca	attggagaag	tgaattatat	aaatataaag	tagtaaaaat	3660
tgaaccatta	ggagtagcac	ccaccaaggc	aaagagaaga	gtggtgcaga	gagaaaaaag	3720
agcagtggga	ataggagctt	tgttccttgg	gttcttggga	gcagcaggaa	gcactatggg	3780
cgcagcctca	atgacgctga	cggtacaggc	cagacaatta	ttgtctggta	tagtgcagca	3840
gcagaacaat	ttgctgaggg	ctattgaggc	gcaacagcat	ctgttgcaac	tcacagtctg	3900
gggcatcaag	cagctccagg	caagaatcct	ggctgtggaa	agatacctaa	aggatcaaca	3960
gctcctgggg	atttgggggt	gctctggaaa	actcatttgc	accactgctg	tgccttggaa	4020
tgctagtgtg	agtaataaat	ctctggaaca	gatttggaa	cacacgacct	ggatggagtg	4080
ggacagagaa	attaacaatt	acacaagctt	aatacactcc	ttaattgaag	aatcgcaaaa	4140
ccagcaagaa	aagaatgaac	aagaattatt	ggaattagat	aaatgggcaa	gtttgtggaa	4200
ttggtttaac	ataacaaatt	ggctgtggta	tataaaaatta	ttcataatga	tagtaggagg	4260
cttggtaggt	ttaagaatag	tttttgctgt	actttctata	gtgaatagag	ttaggcaggg	4320
atattcacca	ttatcgtttc	agaccacct	cccaaccccg	aggggacccg	acaggcccga	4380
aggaatagaa	gaagaagggtg	gagagagaga	cagagacaga	tccattcgat	tagtgaacgg	4440
atctcgacgg	tatcggttaa	cttttaaaaag	aaaagggggg	attgggggggt	acagtgcagg	4500
ggaaagaata	gtagacataa	tagcaacaga	catacaaaact	aaagaattac	aaaaacaaat	4560
tacaaaaatt	caaaatttta	tcgatcacga	gactagcctc	gaggagatct	gatcataatc	4620
agccatacca	catttgtaga	ggttttactt	gctttaaaaa	acctcccaca	cctccccctg	4680
aacctgaaac	ataaaatgaa	tgcaattggt	gttggttaact	tgtttattgc	agcttataat	4740
ggttacaaat	aaggcaatag	catcacaaat	ttcacaaata	aggcattttt	ttcactgcat	4800
tctagttttg	gtttgtccaa	actcatcaat	gtatcttatc	atgtctggat	ctcaaatccc	4860
tcggaagctg	cgctgtctt	aggttggagt	gatacatttt	tatcactttt	acccgtcttt	4920

Naldini.ST25

ggattaggca	gtagctctga	cggccctcct	gtcttaggtt	agtgaaaaat	gtcactctct	4980
tacccgtcat	tggctgtcca	gcttagctcg	caggggaggt	ggctctggatc	caccatgtct	5040
agagaatagg	aacttcggaa	taggaacttc	gcggccgctt	tacttgtaca	gctcgtccat	5100
gccgagagtg	atccccggcg	cggtcacgaa	ctccagcagg	accatgtgat	cgcgcttctc	5160
gttggggctt	ttgctcaggg	cggactgggt	gctcaggtag	tggttgtcgg	gcagcagcac	5220
ggggccgtcg	ccgatggggg	tgttctgctg	gtagtggtcg	gcgagctgca	cgctgccgtc	5280
ctcgatgttg	tggcggatct	tgaagttcac	cttgatgccg	ttcttctgct	tgtcggccat	5340
gatatagacg	ttgtggctgt	tgtagttgta	ctccagcttg	tgccccagga	tgttgccgtc	5400
ctccttgaag	tcgatgccct	tcagctcgat	gcggttcacc	aggggtgcgc	cctcgaactt	5460
cacctcggcg	cgggtcttgt	agttgccgtc	gtccttgaag	aagatgggtgc	gtccttggac	5520
gtagccttcg	ggcatggcgg	acttgaagaa	gtcgtgctgc	ttcatgtggg	cggggtagcg	5580
gctgaagcac	tgcacgccgt	aggtcagggt	ggtcacgagg	gtgggccagg	gcacgggcag	5640
cttgccggtg	gtgcagatga	acttcagggt	cagcttgccg	taggtggcat	cgccctcgcc	5700
ctcgccggac	acgctgaact	tgtggccgtt	tacgtcgccg	tccagctcga	ccaggatggg	5760
caccaccccg	gtgaacagct	cctcgccctt	gctcaccatg	gttgtcgacc	cgacctgagg	5820
gtgaccggga	tctgcggggg	gaccctctga	aaagtgaagg	ataagtgacg	agcggagacg	5880
ggatggcgaa	cagacacaaa	cacacgagag	aagaatgtta	ggactgttgc	aagtttactc	5940
aaaaaatcag	cactctttta	tattatgggt	tacataagca	tttacataag	acttggatag	6000
attccaaaag	aacataggca	agcttgatat	cgaattccca	cgggggttggg	gttgcgcctt	6060
ttccaaggca	gccctgggtt	tgcgcaggga	cgcggtgct	ctgggctggtg	ttccgggaaa	6120
cgcagcggcg	ccgaccctgg	gtctcgaca	ttcttcacgt	ccgttcgcag	cgtcacccgg	6180
atcttcgccg	ctacccttgt	gggccccccg	gcgacgcttc	ctgctccgcc	cctaagtcgg	6240
gaaggttcct	tgcggttcgc	ggcgtgccgg	acgtgacaaa	cggaagccgc	acgtctcact	6300
agtaccctcg	cagacggaca	gcgccaggga	gcaatggcag	cgcgccgacc	gcgatgggct	6360
gtggccaata	gcggctgctc	agcggggcgc	gccgagagca	gcggccggga	aggggcggtg	6420
cgggaggcgg	gggtgtgggg	ggtagtgtgg	gccctgttcc	tgcccgcgcg	gtgttccgca	6480
ttctgcaagc	ctccggagcg	cacgtcggca	gtcggctccc	tcgttgaccg	aatcaccgac	6540
ctctctcccc	agggggatcc	cccgggctgc	aggaattcgg	gccgcggcca	gctccggcgg	6600
gcaggggggg	cgctggagcg	cagcgcagcg	cagccccatc	agtccgcaaa	gcggaccgag	6660
ctggaagtcg	agcgtgcccg	cgggaggcgg	gcgatggggg	caggtgccac	cggccgcgcc	6720
atggacgggc	cgcgcctgct	gctgttgctg	cttctggggg	tgtcccttgg	aggtgccaag	6780
gaggcatgcc	ccacaggcct	gtacacacac	agcggtgagt	gctgcaaagc	ctgcaacctg	6840

Naldini.ST25

ggcgaggggtg	tggcccagcc	ttgtggagcc	aaccagaccg	tgtgtgagcc	ctgcctggac	6900
agcgtgacgt	tctccgacgt	ggtgagcgcg	accgagccgt	gcaagccgtg	caccgagtgc	6960
gtggggctcc	agagcatgtc	ggcgccgtgc	gtggaggccg	acgacgccgt	gtgccgctgc	7020
gcctacggct	actaccagga	tgagacgact	gggcgctgcg	aggcgtgccg	cgtgtgcbag	7080
gcgggctcgg	gcctcgtgtt	ctcctgccag	gacaagcaga	acaccgtgtg	cgaggagtgc	7140
cccgaaggca	cgtattccga	cgaggccaac	cacgtggacc	cgtgcctgcc	ctgcaccgtg	7200
tgcgaggaca	ccgagcgcca	gctccgcgag	tgacacgct	gggccgacgc	cgagtgcgag	7260
gagatccctg	gccgttggat	tacacggtcc	acacccccag	agggctcggg	cagcacagcc	7320
cccagcacc	aggagcctga	ggcacctcca	gaacaagacc	tcatagccag	cacggtggca	7380
ggtgtggtga	ccacagtgat	gggcagctcc	cagcccgtgg	tgacccgagg	caccaccgac	7440
aacctcatcc	ctgtctattg	ctccatcctg	gctgctgtgg	ttgtgggcct	tgtggcctac	7500
atagccttca	agagggtgaa	cagggggatc	ctctagagtc	gagtctagag	tcgacaatca	7560
acctctggat	tacaaaattt	gtgaaagatt	gactgggtatt	cttaactatg	ttgctccttt	7620
tacgctatgt	ggatacgctg	ctttaatgcc	tttgtatcat	gctattgctt	cccgtatggc	7680
tttcattttc	tcctccttgt	ataaatcctg	gttgctgtct	ctttatgagg	agttgtggcc	7740
cgttgtcagg	caacgtggcg	tgggtgtcac	tgtgtttgct	gacgcaaccc	ccactggttg	7800
gggcattgcc	accacctgtc	agctcctttc	cgggactttc	gctttccccc	tcctatttgc	7860
cacggcgga	ctcatcgccg	cctgccttgc	ccgctgctgg	acaggggctc	ggctgttggg	7920
cactgacaat	tccgtggtgt	tgtcggggaa	gctgacgtcc	tttccatggc	tgctcgcttg	7980
tgttgccacc	tggattctgc	gcgggacgtc	cttctgctac	gtcccttcgg	ccctcaatcc	8040
agcggacctt	ccttcccgcg	gcctgctgcc	ggctctgcgg	cctcttccgc	gtcttcgcct	8100
tcgccctcag	acgagtcgga	tctccctttg	ggccgcctcc	ccgcctggaa	ttcgagctcg	8160
gtacctttaa	gaccaatgac	ttacaaggca	gctgtagatc	ttagccactt	tttaaaagaa	8220
aaggggggac	tggaagggtc	aattcactcc	caacgaagac	aagatctgct	ttttgcttgt	8280
actgggtctc	tctggttaga	ccagatctga	gcctgggagc	tctctggcta	actagggaac	8340
ccactgctta	agcctcaata	aagcttgcc	tgagtgtctc	aagtagtgtg	tgcccgtctg	8400
ttgtgtgact	ctggtaacta	gagatccctc	agaccctttt	agtcagtgtg	gaaaatctct	8460
agcagtagta	gttcatgtca	tcttattatt	cagtatttat	aacttgcaaa	gaaatgaata	8520
tcagagagtg	agaggaaactt	gtttatttga	gcttataatg	gttacaata	aagcaatagc	8580
atcacaaaatt	tcacaaaataa	agcatttttt	tcactgcatt	ctagttgtgg	tttgtccaaa	8640
ctcatcaatg	tatcttatca	tgtctggctc	tagctatccc	gcccctaact	ccgcccagtt	8700

Naldini.ST25

ccgccccattc tccgccccat ggctgactaa ttttttttat ttatgcagag gccgaggccg	8760
cctcggcctc tgagctattc cagaagtagt gaggaggctt ttttggaggc ctaggctttt	8820
gcgtcgagac gtaccaatt cgccctatag tgagtcgtat tacgcgcgct cactggccgt	8880
cgttttacaa cgctgtgact gggaaaaccc tggcgttacc caacttaatc gccttgacgc	8940
acatccccct ttcgccagct ggcgtaatag cgaagaggcc cgcaccgatc gcccttccca	9000
acagttgcgc agcctgaatg gcgaatggcg cgacgcgccc tgtagcggcg cattaagcgc	9060
ggcgggtgtg gtggttacgc gcagcgtgac cgctacactt gccagcgcgc tagcgcgcgc	9120
tcctttcgct ttcttccctt cctttctcgc cacgttcgcc ggctttcccc gtcaagctct	9180
aaatcggggg ctcccttttag ggttccgatt tagtgcttta cggcacctcg accccaaaaa	9240
acttgattag ggtgatgggt cacgtagtgg gccatcgccc tgatagacgg tttttcgccc	9300
tttgacgttg gagtccacgt tctttaatag tggactcttg ttccaaactg gaacaacact	9360
caacctatc tcggtctatt cttttgattt ataagggatt ttgccgattt cggcctattg	9420
gttaaaaaat gagctgattt aacaaaaatt taacgcgaat ttttaacaaa tattaacgtt	9480
tacaatttcc	9490

<210> 8

<211> 10086

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid

<220>

<221> misc_feature

<222> (1)..(10086)

<223>

<220>

<221> misc_feature

<222> (1)..(10086)

<223> plasmid containing the lentiviral vector construct CCL-MA4-GFP/de
ltaLNGFR

Naldini.ST25

<400> 8
caggtggcac ttttcgggga aatgtgcgcg gaacccctat ttgtttatit ttctaaatac 60
attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa taatattgaa 120
aaaggaagag tatgagtatt caacatttcc gtgtcgcctt tattcccttt ttgcgggcat 180
tttgccttcc tgtttttgct caccagaaa cgctggtgaa agtaaaagat gctgaagatc 240
agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag atccttgaga 300
gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg ctatgtggcg 360
cgggtattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata cactattctc 420
agaatgactt gggtgagtac tcaccagtca cagaaaagca tcttacggat ggcattgacag 480
taagagaatt atgcagtgc gccataacca tgagtataa cactgcggcc aacttacttc 540
tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg ggggatcatg 600
taactcgcct tgatcgttgg gaaccggagc tgaatgaagc cataccaaac gacgagcgtg 660
acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact ggcgaactac 720
ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa gttgcaggac 780
cacttctgcg ctcgccctt ccggctggct gggtttattgc tgataaatct ggagccgggtg 840
agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggttaagccc tcccgtatcg 900
tagttatcta cacgacgggg agtcaggcaa ctatggatga acgaaataga cagatcgctg 960
agatagggtc ctactgatt aagcattggg aactgtcaga ccaagtttac tcatatatac 1020
tttagattga tttaaaactt catTTTTaat ttaaaggat ctaggtgaag atcctttttg 1080
ataatctcat gacaaaaatc ccttaacgtg agttttcgtt ccactgagcg tcagacccccg 1140
tagaaaagat caaaggatct tcttgagatc ctttttttct gcgcgtaatc tgctgcttgc 1200
aaacaaaaaa accaccgcta ccagcgggtg tttgtttgcc ggatcaagag ctaccaactc 1260
tttttccgaa ggtaactggc ttcagcagag cgcagatacc aaatactgtc cttctagtgt 1320
agccgtagtt aggccaccac ttcaagaact ctgtagcacc gcctacatac ctgctctgc 1380
taatcctgtt accagtggct gctgccagtg gcgataagtc gtgtcttacc gggttggact 1440
caagacgata gttaccggat aaggcgcagc ggtcgggctg aacggggggg tcgtgcacac 1500
agcccagctt ggagcgaacg acctacaccg aactgagata cctacagcgt gagctatgag 1560
aaagcgccac gcttcccga gggagaaagg cggacaggta tccggtaagc ggcagggtcg 1620
gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt tatagtcctg 1680
tcgggtttcg ccacctctga cttgagcgtc gatTTTTgtg atgctcgtca ggggggcgga 1740
gcctatggaa aaacgccagc aacgcggcct ttttacggtt cctggccttt tgctggcctt 1800
ttgctcacat gttcttttct gcgttatccc ctgattctgt ggataaccgt attaccgcct 1860

Naldini.ST25

ttgagtgagc	tgataccgct	cgccgcagcc	gaacgaccga	gcgagcgag	tcagtgagcg	1920
aggaagcgga	agagcgccca	atacgcaaac	cgcctctccc	cgcgcgttgg	ccgattcatt	1980
aatgcagctg	gcacgacagg	tttcccgaact	ggaaagcggg	cagtgcgagc	aacgcaatta	2040
atgtgagtta	gctcactcat	taggcacccc	aggctttaca	ctttatgctt	ccggctcgta	2100
tgttgtgtgg	aattgtgagc	ggataacaat	ttcacacagg	aaacagctat	gacatgatt	2160
acgccaagcg	cgcaattaac	cctcactaaa	gggaacaaaa	gctggagctg	caagcttggc	2220
cattgcatac	gttgatcca	tatcataata	tgtacattta	tattggctca	tgtccaacat	2280
taccgccatg	ttgacattga	ttattgacta	gttattaata	gtaatcaatt	acgggggtcat	2340
tagttcatag	cccatatatg	gagttccgag	ttacataact	tacggtaaat	ggccccgctg	2400
gctgaccgcc	caacgacccc	cgcccattga	cgtcaataat	gacgtatgtt	cccatagtaa	2460
cgccaatagg	gactttccat	tgacgtcaat	gggtggagta	tttacggtaa	actgcccact	2520
tggcagtaca	tcaagtgtat	catatgcaa	gtacgcccc	tattgacgtc	aatgacggta	2580
aatggccgc	ctggcattat	gcccagtaca	tgacctatg	ggactttcct	acttggcagt	2640
acatctacgt	attagtcac	gctattacca	tggtgatgcg	gttttggcag	tacatcaatg	2700
ggcgtggata	gcggtttgac	tcacggggat	ttccaagtct	ccacccatt	gacgtcaatg	2760
ggagtttgtt	ttggcaccaa	aatcaacggg	actttccaaa	atgtcgtaac	aactccgccc	2820
cattgacgca	aatgggcggg	aggcgtgtac	ggtgggaggt	ctatataagc	agagctcggt	2880
tagtgaaccg	gggtctctct	ggttagacca	gatctgagcc	tgggagctct	ctggctaact	2940
aggaaccca	ctgcttaagc	ctcaataaag	cttgccctga	gtgcttcaag	tagtgtgtgc	3000
ccgtctgttg	tgtgactctg	gtaactagag	atccctcaga	cccttttagt	cagtgtggaa	3060
aatctctagc	agtggcgccc	gaacagggac	ctgaaagcga	aagggaaacc	agagctctct	3120
cgacgcagga	ctcggcttgc	tgaagcgcg	acggcaagag	gcgaggggag	gcgactgggtg	3180
agtacgcaa	aaattttgac	tagcggaggc	tagaaggaga	gagatgggtg	cgagagcgctc	3240
agtattaagc	gggggagaat	tagatcgcg	tgggaaaaaa	ttcggttaag	gccaggggga	3300
aagaaaaaat	ataaattaaa	acatatagta	tgggcaagca	gggagctaga	acgattcgca	3360
gttaatcctg	gcctgttaga	aacatcagaa	ggctgtagac	aaatactggg	acagctacaa	3420
ccatcccctt	agacaggatc	agaagaactt	agatcattat	ataatacagt	agcaaccctc	3480
tattgtgtgc	atcaaaggat	agagataaaa	gacaccaagg	aagctttaga	caagatagag	3540
gaagagcaaa	acaaaagtaa	gaccaccgca	cagcaagcgg	ccgctgatct	tcagacctgg	3600
aggaggagat	atgagggaca	attggagaag	tgaattatat	aaatataaag	tagtaaaaaat	3660
tgaaccatta	ggagtagcac	ccaccaaggc	aaagagaaga	gtggtgcaga	gagaaaaaag	3720

Naldini.ST25

agcagtggga ataggagctt tgttccttgg gttcttggga gcagcaggaa gcactatggg	3780
cgcagcctca atgacgctga cggtagcaggc cagacaatta ttgtctggta tagtgcagca	3840
gcagaacaat ttgctgaggg ctattgaggg gcaacagcat ctgttgcaac tcacagtctg	3900
gggcatcaag cagctccagg caagaatcct ggctgtggaa agatacctaa aggatcaaca	3960
gctcctgggg atttgggggtt gctctggaaa actcatttgc accactgctg tgccttggaa	4020
tgctagttag agtaataaat ctctggaaca gattggaatc acacgacctg gatggagtgg	4080
gacagagaaa ttaacaatta cacaagctta atacactcct taattgaaga atcgcaaaac	4140
cagcaagaaa agaattgaaca agaattattg gaattagata aatgggcaag tttgtggaat	4200
tggtttaaca taacaaattg gctgtggtat ataaaattat tcataatgat agtaggagggc	4260
ttggtaggtt taagaatagt ttttgcctgta ctttctatag tgaatagagt taggcagggg	4320
tattcaccat tatcgtttca gaccacctc ccaaccccga ggggacccga caggcccgaa	4380
ggaatagaag aagaagggtg agagagagac agagacagat ccattcgatt agtgaacgga	4440
tctcgacggt atcggttaac ttttaaaaga aaagggggga ttggggggta cagtgcaggg	4500
gaaagaatag tagacataat agcaacagac atacaaacta aagaattaca aaaacaaatt	4560
acaaaaattc aaaattttat cgatcacgag actagcctcg agagatctga tcataatcag	4620
ccataaccaca tttgtagagg ttttacttgc tttaaaaaac ctcccacacc tccccctgaa	4680
cctgaaacat aaaatgaatg caattgttgt tggttaacttg tttattgcag cttataatgg	4740
ttacaaataa ggcaatagca tcacaaattt cacaataaag gcattttttt cactgcattc	4800
tagttttggt ttgtccaaac tcatcaatgt atcttatcat gtctggatct caaatccctc	4860
ggaagctgcg cctgtcttag gttggagtga tacattttta tcacttttac ccgtctttgg	4920
attaggcagt agctctgacg gccctcctgt cttaggttag tgaaaaatgt cactctctta	4980
cccgtcattg gctgtccagc ttagctcgca ggggaggtgg tctggatccg agctcgaatt	5040
ggccgcttta cttgtacagc tcgtccatgc cgagagtgat cccggcggcg gtcacgaact	5100
ccagcaggac catgtgatcg cgcttctcgt tggggctttt gctcagggcg gactgggtgc	5160
tcaggtagtg gttgtcgggc agcagcacgg ggccgtcgcc gatgggggtg ttctgctggt	5220
agtggtcggc gagctgcacg ctgccgtcct cgatgttgtg gcggatcttg aagttcacct	5280
tgatgccgtt cttctgcttg tcggccatga tatagacgtt gtggctgttg tagttgtact	5340
ccagcttggtg ccccaggatg ttgccgtcct ccttgaagtc gatgcccttc agctcgatgc	5400
ggttcaccag ggtgtcgccc tcgaacttca cctcggcgcg ggtctttag ttgccgtcgt	5460
ccttgaagaa gatggtgcgc tcctggacgt agccttcggg catggcggac ttgaagaagt	5520
cgtgctgctt catgtggtcg gggtagcggc tgaagcactg cacgccgtag gtcaggggtg	5580
tcacgagggg gggccagggc acgggcagct tgccgggtgg gcagatgaac ttcaggggtca	5640

Naldini.ST25

gcttgccgta ggtggcatcg ccctcgccct cgccggacac gctgaacttg tggccgttta	5700
cgtcgccgtc cagctcgacc aggatgggca ccaccccggt gaacagctcc tcgcccttgc	5760
tcaccatggt gaattccgcg gaggtctggat cgggtcccgt gtcttctatg gaggtcaaaa	5820
cagcgtggat ggcgtctcca ggcgatctga cggttcacta aacgagctct gcttatatag	5880
gcctcccacc gtacacgcct accctcgaga agcttgatta acccgtgtcg gctccagatc	5940
tggcctccgc gccgggtttt ggcgcctccc gcgggcgccc ccctcctcac ggcgagcgct	6000
gccacgtcag acgaaggcg cagcgagcgt cctgatcctt ccgcccggac gctcaggaca	6060
gcggcccgt gtcataaga ctcggcctta gaaccccgat atcagcagaa ggacatttta	6120
ggacgggact tgggtgactc tagggcactg gttttctttc cagagagcgg aacaggcgag	6180
gaaaagtagt cccttctcgg cgattctgcg gagggatctc cgtggggcgg tgaacgccga	6240
tgattatata aggacgcgcc ggggtgtggca cagctagtct cgtcgcagcc gggatttggg	6300
tcgcggttct tgtttgtgga tcgctgtgat cgtcacttgg tgagttgcgg gctgctgggc	6360
tggccggggc tttcgtggcc gccgggccgc tcggtgggac ggaagcgtgt ggagagaccg	6420
ccaagggtcg tagtctgggt ccgcgagcaa gggtgccctg aactgggggt tggggggagc	6480
gcacaaaatg gcggctgttc ccgagtcctt aatggaagac gcttgtaagg cgggctgtga	6540
ggtcgttgaa acaagggtgg gggcatggtg ggcggcaaga acccaaggtc ttgaggcctt	6600
cgctaagcg ggaaagctct tattcggtg agatgggctg gggcaccatc tggggaccct	6660
gacgtgaagt ttgtcactga ctggagaact cgggtttgtc gtctggttgc gggggcgga	6720
gttatgcggt gccgttgggc agtgcacccg tacctttggg agcgcgcgcc tcgtcgtgtc	6780
gtgacgtcac ccgttctgtt ggcttataat gcagggtggg gccacctgcc ggtaggtgtg	6840
cggtaggctt ttctccgtcg caggacgcag gggtcgggcc tagggtaggc tctcctgaat	6900
cgacaggcgc cggacctctg gtgaggggag ggataagtga ggcgtcagtt tctttggtcg	6960
gttttatgta cctatcttct taagtagctg aagctccggt tttgaactat gcgctcgggg	7020
ttggcgagtg tgttttgtga agtttttttag gcaccttttg aaatgtaatc atttgggtca	7080
atatgtaatt ttcagtgtta gactagtaaa ttgtccgcta aattctggcc gtttttggct	7140
tttttgtagt acgaagcttg ggctgcagga attcggggcc cggccagctc cggcgggcag	7200
ggggggcgct ggagcgcagc gcagcgcagc cccatcagtc cgcaaagcgg accgagctgg	7260
aagtcgagcg ctgccgcggg aggcgggcga tgggggcagg tgccaccggc cgcgccatgg	7320
acgggccgcg cctgctgctg ttgctgcttc tgggggtgtc ccttgagggt gccaaggagg	7380
catgccccac aggcctgtac acacacagcg gtgagtgtg caaagcctgc aacctgggcg	7440
aggggtgtggc ccagccttgt ggagccaacc agaccgtgtg tgagccctgc ctggacagcg	7500

Naldini.ST25

tgacgttctc	cgacgtggtg	agcgcgaccg	agccgtgcaa	gccgtgcacc	gagtgcgtgg	7560
ggctccagag	catgtcggcg	ccgtgcgtgg	aggccgacga	cgccgtgtgc	cgctgcgcct	7620
acggctacta	ccaggatgag	acgactgggc	gctgcgaggg	gtgccgcgtg	tgcgaggcgg	7680
gctcgggcct	cgtgttctcc	tgccaggaca	agcagaacac	cgtgtgcgag	gagtgccccg	7740
acggcacgta	ttccgacgag	gccaaccacg	tggacccgtg	cctgccctgc	accgtgtgcg	7800
aggacaccga	gcgccagctc	cgcgagtgca	cacgtggggc	cgacgccgag	tgcgaggaga	7860
tccctggccg	ttggattaca	cggtccacac	ccccagaggg	ctcggacagc	acagccccc	7920
gcacccagga	gcctgaggca	cctccagaac	aagacctcat	agccagcacg	gtggcagggtg	7980
tggtgaccac	agtgatgggc	agctcccagc	ccgtgggtgac	ccgaggcacc	accgacaacc	8040
tcatccctgt	ctattgctcc	atcctggctg	ctgtggttgt	gggccttgtg	gcctacatag	8100
ccttcaagag	gtggaacagg	gggatcctct	agagtcgagt	ctagagtcga	caatcaacct	8160
ctggattaca	aaatttgtga	aagattgact	ggatttctta	actatgttgc	tcctttttacg	8220
ctatgtggat	acgctgcttt	aatgcctttg	tatcatgcta	ttgcttccccg	tatggctttc	8280
atcttctcct	ccttgtataa	atcctggttg	ctgtctcttt	atgaggagtt	gtggcccgtt	8340
gtcaggcaac	gtggcgtggt	gtgcactgtg	tttgctgacg	caacccccac	tggttggggc	8400
attgccacca	cctgtcagct	cctttccggg	actttcgctt	tccccctccc	tattgccacg	8460
gcggaactca	tcgccgcctg	ccttgcccgc	tgctggacag	gggctcggct	gttgggcact	8520
gacaattccg	tggtgttgtc	ggggaagctg	acgtcctttc	catggctgct	cgctgtgtt	8580
gccacctgga	ttctgcgcgg	gacgtccttc	tgctacgtcc	cttcggccct	caatccagcg	8640
gaccttcctt	cccgcggcct	gctgccggct	ctgcggcctc	ttccgcgtct	tcgccttcgc	8700
cctcagacga	gtcggatctc	cctttgggcc	gcctccccgc	ctggaattcg	agctcggtag	8760
ctttaagacc	aatgacttac	aaggcagctg	tagatcttag	ccacttttta	aaagaaaagg	8820
ggggactgga	agggctaatt	cactcccaac	gaagacaaga	tctgcttttt	gcttgtactg	8880
ggtctctctg	gttagaccag	atctgagcct	gggagctctc	tggctaacta	gggaaccac	8940
tgcttaagcc	tcaataaagc	tfgccttgag	tgcttcaagt	agtgtgtgcc	cgctctgtgt	9000
gtgactctgg	taactagaga	tccctcagac	ccttttagtc	agtgtggaaa	atctctagca	9060
gtagtagttc	atgtcatctt	attattcagt	atctataact	tgcaaagaaa	tgaatatcag	9120
agagtgagag	gaacttgttt	attgcagctt	ataatggtta	caaataaagc	aatagcatca	9180
caaatttcac	aaataaagca	tttttttcac	tgcatcttag	ttgtggtttg	tccaaactca	9240
tcaatgtatc	ttatcatgtc	tggctctagc	tatccccccc	ctaactccgc	ccagttccgc	9300
ccatttctccg	ccccatggct	gactaatttt	ttttatttat	gcagaggccg	aggccgcctc	9360
ggcctctgag	ctattccaga	agtagtgagg	aggctttttt	ggaggcctag	gcttttgcgt	9420

Naldini.ST25

cgagacgtac ccaattcgcc ctatagttag	tcgtattacg cgcgctcact ggccgctcgtt	9480
ttacaacgtc gtgactggga aaaccctggc	gttaccacaac ttaatcgctt tgcagcacat	9540
ccccctttcg ccagctggcg taatagcgaa	gaggcccgca ccgatcgccc ttcccaacag	9600
ttgcgcagcc tgaatggcga atggcgcgac	gcgccctgta gcggcgctt aagcgcggcg	9660
ggtgtggtgg ttacgcgcag cgtgaccgct	acacttgcca gcgccctagc gcccgctcct	9720
ttcgctttct tcccttcctt tctcgccacg	ttcgccggct ttccccgtca agctctaaat	9780
cgggggctcc ctttaggggtt ccgatttagt	gctttacggc acctcgaccc caaaaaactt	9840
gattaggggtg atgggttcacg tagtgggcca	tcgccctgat agacgggttt tcgccctttg	9900
acgttggagt ccacgttctt taatagtgga	ctcttggtcc aaactggaac aacactcaac	9960
cctatctcgg tctattcttt tgatttataa	gggattttgc cgatttcggc ctattggtta	10020
aaaaatgagc tgatttaaca aaaatttaac	gcgaatttta acaaaatatt aacgtttaca	10080
atttcc		10086